

ORDER

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

4040.26

8/1/97

SUBJ: **AIRCRAFT CERTIFICATION SERVICE FLIGHT SAFETY PROGRAM**

1. PURPOSE. This order identifies specific elements of Federal Aviation Administration (FAA) Order 4040.9D, FAA Aircraft Management Program, Chapter 5, FAA Flight Safety Program which are unique to the Aircraft Certification Service (AIR). All elements of Order 4040.9D, Chapter 5 shall be observed by Aircraft Certification Service participants unless stated in this order.

2. DISTRIBUTION. This order is distributed to the branch level in Washington headquarters Aircraft Certification Service (AIR), regional Aircraft Certification Directorates, all Aircraft Certification Offices (ACO's), and the Brussels Aircraft Certification Staff.

3. FUNCTIONAL LEVELS AND ASSOCIATED ROLES.

a. Service Level. The Director of the Aircraft Certification Service, AIR-1, will appoint a Lead Flight Safety Officer (LFSO) to manage the AIR Flight Safety Program. The AIR LFSO will be a member of the FAA Flight Safety Program Advisory Committee (PAC). The LFSO will develop a system of collecting and disseminating flight test incident and accident information to the AIR flight test community.

(1) The Flight Program Oversight Committee (FPOC) will fulfill the role of the Flight Safety Committee (FSC) required by Order 4040.9D, paragraph 514(d). The primary purpose of the FSC is to set goals and review safety-related recommendations. The FSC should review the AIR plans, policies, procedures, conditions, instructions for recent flight experience, and the responsiveness to corrective recommendations.

(2) The LFSO represents the highest level of safety management within AIR. As the safety representative for the organization, the LFSO shall:

(a) Provide proactive leadership regarding safety matters while performing as a liaison between the FAA Senior Flight Safety Officer (SFSO-Washington, D.C.), respective organizational managers, flight program participants, and flight test engineers that are routinely assigned to and participate in flights.

(b) Manage an organizational Flight Safety Plan (FSP) that meets the policy, standards, and guidelines of the national program.

(c) Attend training in safety program management for Flight Safety Officers (FSO's).

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AFS-600(3Copies); AMA-220(25Copies)

Initiated By: AIR-130

(d) Perform as the focal point within AIR for Crew Resource Management (CRM).

(e) Participate in scheduled FAA FSO conferences, PAC meetings, and relevant aviation industry flight safety events within the available resources.

b. Directorate Level. Each directorate manager will appoint a FSO. Directorates that have geographically detached ACO's reporting to them may elect to appoint Assistant Flight Safety Officers (AFSO) at such locations. Flight safety files and records will be maintained by the directorate FSO or AFSO if so organized.

(1) The FSO's manage and represent flight safety programs (FSP's) at the directorate level. The FSO's comply with the policy, standards, and guidelines of organizational and/or national level programs. As the manager of the operational level FSP, the FSO shall:

(a) Attend training in aviation safety program management. To complete that requirement, FAA Course 12035, *Crew Assessment/Flight Program Management for Flight Safety Officers*, is provided by the national FSP.

(b) Coordinate safety issues common to operations. When necessary, elevate and coordinate with the LFSO.

(c) Promote the use of standard operating procedures that enhance safety.

(d) Conduct or provide safety meetings at least once for each quarter and maintain meeting records that include subjects, dates, presenters, and attendance. Safety meetings should be structured to include both the Order 4040.9D Flight Program and flight test project flying. Flight test engineers should be included in that portion of the meetings.

(e) Identify and analyze trends of aeronautical occurrences and hazards reported within the FSO area of responsibility.

(f) Maintain copies of all reported internal aeronautical occurrences and hazards.

(g) Initiate accident prevention measures and/or track corrective actions, and retain a record of actions taken.

(h) Develop and maintain an internal plan for responding to aircraft accidents/incidents within the flight program. This plan must take into consideration both the Order 4040.9D, Flight Program and flight test project flying.

(2) The AFSO is assigned at the ACO level to assist in the management of the FSP. The AFSO shall conduct assigned elements for FSO's responsibilities and participate in the organization's aircraft flight program.

4. PROCEDURES.

a. Flight Test Risk Management. Risk management is the process by which an assessment is made of the risks involved during a flight test, the establishment of mitigating procedures to reduce or eliminate the risks, and a conscious acceptance of the residual risks. Risk assessment is normally done by a safety review process in which a flight test plan is reviewed by project and non-project personnel in order to draw out potential hazards and recommend mitigating (or minimizing) procedures. Experience has shown that knowledgeable non-project personnel who are similarly involved in other projects provide valuable contributions to this process. They can identify areas that may have been overlooked by the project team (aircraft manufacturer vs. limited flight test experience), and flight crew currency in both the test method(s) and aircraft type.

(1) Aircraft Certification Office managers or Flight Test Managers or their designees will sign **all** Type Inspection Authorizations (TIAs). These managers **must understand** that by signing a TIA, they are, in fact, stating that they have assessed and accepted the flight test risks involved with the project. Therefore, it is necessary for the manager or his/her designee, to insure that the proper risk assessment be completed **prior** to signing the TIA. The degree and depth of the risk assessment process to be used for each test project will be determined by, and is the responsibility of, the ACO manager or the designee. Factors to be considered when making such a determination include, but not limited to, type of tests (avionics or airframe), knowledge based on particular tests (first time vs. done many times in the past), level of sophistication demonstrated by the applicant (large aircraft manufacturer vs. limited flight tests experience), and flight crew currency in both the test method(s) and aircraft type.

(2) All TIAs will be coordinated with all members of the certification team (engineering, manufacturing and, if appropriate, the Aircraft Evaluation Group).

b. Risk Assessment.

(1) In cases where flight testing is done with a large company that has a well developed risk management process, all AIR flight test crew members will become a part of that company's process and perform accordingly. Flight test managers and/or crews, however, always have the option to modify flight test profiles and/or procedures as necessary to satisfy FAA-unique safety concerns.

(2) For those flight test projects where there is no developed risk management process (i.e., one-of-a-kind, short duration, remote site, etc.), a safety review shall be done at the office prior to signing the TIA. Once at the test site, the test crew should use the briefing guide in appendix 1 prior to the first flight. For subsequent flights, the appropriate parts of the briefing guide should be used as necessary.

c. Aeronautical Occurrence, Hazard Reports and Data Collection. It is the intent of AIR to provide the highest level of safety while accomplishing the certification mission, which may involve a higher than normal degree of risk associated with flight testing new or modified aircraft. To enhance operational safety, each directorate within AIR will be responsible for establishing and maintaining their own internal program which identifies and reports on aeronautical occurrences and hazards.

(1) Throughout AIR, pilots/operators must report all accident/incidents in accordance with paragraph 3.e. below. In addition, pilots/operators must report all aeronautical occurrences as soon as practicable to their organizational management.

(2) Significant incidents or potentially hazardous occurrences during flight testing shall be reported to the FSO using an appropriate form. The intent is to facilitate sharing the details of such occurrences and the lessons learned.

(3) Hazards identified while conducting the AIR flight program, in general, must be reported using FAA Form 4040-8, Safety Improvement/Hazard Detection report (figure 3-1).

(4) The FSO will forward all submitted reports to the AIR LFSO. The LFSO will use these reports to resolve problems, identify trends, and disseminate useful information for discussion at periodic safety meetings. All flight test related reports will be distributed by the LFSO to the AIR flight test community for information. In addition, the LFSO will forward submitted FAA Forms 4040-8 to the FAA SFSO.

d. Accident Response Plan. Each operating organization within AIR will establish a detailed accident response plan reflecting pertinent steps to be taken by various office personnel in case of an aircraft accident. FAA Order 8020.11A, Aircraft Accident and Incident Notification, Investigation, and Reporting, should be incorporated into this plan.

(1) The accident response plan must be flexible enough to accommodate variations in the appropriate response. As an example, the variations should accommodate an accident that may occur as a result of flight activity within the scope of Order 4040.9D, flight testing of an applicants aircraft in conjunction with a TIA, or assistance to field inspectors on some other authority (e.g., memo, record of Telecon, etc.). The plan must also account for variations in the organizational structure of the office/facility involved, and the resources available to those personnel tasked with implementing the response plan.

(2) The guide in appendix 2 may be useful in developing an accident response plan. It is generic and should be modified as necessary to fit the particular regional/organizational structure.

e. Reporting Aeronautical Occurrences. Immediately following an aircraft accident, incident, ground accident, or aeronautical hazard, the pilot-in-command of an FAA aircraft (or his/her operating organization) shall transmit by facsimile or telephone all applicable information using FAA Form 4040-11, Aircraft Aeronautical Occurrence (figure 3-2). Telephone transmittals must be followed by facsimile confirmation.

f. Accident Investigation Responsibilities.

(1) **Background.** The manager of the regional Flight Standards Division is responsible for assuring that all aircraft accidents/incidents that occur in the division's geographical area of responsibility are investigated and reported to ensure the proper discharge of FAA responsibilities. The

FIGURE 3-1. FAA FORM 4040.8

RIS: AC 4040-5

**SAFETY IMPROVEMENT/
HAZARD DETECTION REPORT**

<<< SECTION A >>>

TO: Flight Safety Officer (FSO), _____
(Please insert FSO's Name and User Organization Routing Symbol.)

FROM: _____ Date _____
(Optional - Name of Employee Submitting Report)

Describe Perceived Hazard(s):

Suggested Safety Improvement(s):

☐ I want feedback for action taken on this report.

<<< SECTION B >>>

Follow-up Action Taken:

☐ YES, action required. _____ Date report forwarded to management.

☐ NO, action not required. _____ Date response provided to employee.

☐ Risk Assessment

Flight Safety Officer (Signature Required)

Date

<<< SECTION C >>>

Management Official (Signature)

Date

Expected Completion Date

Action to be taken:

Date Corrective Action Initiated: _____ Date Corrective Action Completed: _____

Date Response Returned to Flight Safety Officer _____

(If additional space needed, attach blank 8½" x 11" paper.)

FAA Form 4040-8 (2/96) ♦ Supersedes Previous Edition(s) ♦ Local Reproduction Authorized

FIGURE 3-2. FAA FORM 4040.11

**FAA Aircraft
Aeronautical Occurrence
(See Reverse for Distribution List)**

RIS: AC 4040-1

1. Type of Occurrence: <input type="checkbox"/> Accident <input type="checkbox"/> Incident - In-Flight <input type="checkbox"/> Incident - on Ground <input type="checkbox"/> Aeronautical Hazard <input type="checkbox"/> Other		2. Date: _____		3. Time: _____ Zone: _____		4. Zulu Time: _____		5. Aircraft Info N-Number: _____ Make & Model: _____	
6. Point of Departure:				7. Purpose of Flight:					
8. FLIGHT CREW Name Crew No. Crew Position _____ _____ _____ _____						9. Persons Total on Board: _____ Fatalities: _____ Seriously injured: _____		10. Aircraft Status Aircraft Grounded (Y/N): _____ Assistance Required: _____ Expected Return: _____ Where is it now: _____	
11. Aircraft Location at Time of Occurrence						12. <input type="checkbox"/> Flight was intended: <input type="checkbox"/> Incident - on-Ground. Check if: <input type="checkbox"/> Immediate report to NTSB is required per NTSB 830.5 in YES. <input type="checkbox"/> Estimated Repair Cost OVER \$1,000			
11a. Intended Destination:						13. Aircraft Damage <input type="checkbox"/> None <input type="checkbox"/> Minor <input type="checkbox"/> Substantial <input type="checkbox"/> Destroyed		14. Injury Index <input type="checkbox"/> None <input type="checkbox"/> Minor <input type="checkbox"/> Serious <input type="checkbox"/> Fatal	
Causal Factors									
15. Accident In-Flight <input type="checkbox"/> Mid-air Collision <input type="checkbox"/> Mechanical <input type="checkbox"/> Fuel <input type="checkbox"/> Other			16. Incident In-Flight <input type="checkbox"/> Near Mid-air Collision <input type="checkbox"/> Mechanical <input type="checkbox"/> Fuel <input type="checkbox"/> Pilot Deviation from ATC <input type="checkbox"/> Other			17. Accident on Ground <input type="checkbox"/> Collision <input type="checkbox"/> Mechanical <input type="checkbox"/> Fuel <input type="checkbox"/> Other		18. Incident on Ground <input type="checkbox"/> Under Guidance of Ground Personnel <input type="checkbox"/> Ground Navigation <input type="checkbox"/> Taxi <input type="checkbox"/> Stationary <input type="checkbox"/> Other	
19. Part, component, or system involved:									
20. Inflight Emergency Procedures used:									
21. Description of Occurrence: 									
22. Apparent Cause:					23. Action Taken (post-occurrence)				
24. Description of Hazardous material on board (Radioactive, Explosive, etc.)					25. Weather Information (Briefly Describe)				

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National Transportation Safety Board (NTSB) shall investigate all accidents and incidents involving FAA aircraft or airmen (reference Order 8020.11A).

(2) The AIR LFSO will recommend to AIR-1 formation of an AIR mishap investigation team, when deemed necessary, in order to capture: “lessons learned” from a procedural perspective. These investigations will be performed in coordination with the FAA Office of Accident Investigation (AAI).

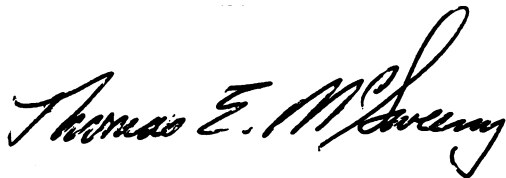
g. Audits and Site Visits. Formal safety evaluations throughout AIR will be conducted in conjunction with the flight program audits, in order to assure the least possible interruption to normal operational or organizational activities.

h. Memorandum of Agreement (MOA). Directorates and/or ACO’s that have a small number of participants may choose to satisfy pertinent requirements of this order, at the ACO level, by affiliating with another FAA organization. This arrangement must be established by a MOA between the two organizations and coordinated with the LFSO.

i. Safety Support Activities.

(1) **Safety Plan.** All ACO’s shall develop a safety plan to include a post accident plan and a method of reporting flight incidents and mishaps to the LFSO.

(2) **Crew Resource Management (CRM).** Flight test pilots and engineers throughout AIR are required to attend appropriate Crew Resource Management courses offered by either the FAA or other recognized organizations. Once these courses are formally established for the FAA, test pilots and flight test engineers should attend an initial course and are encouraged to attend refresher courses within available resources.



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APPENDIX 1. FAA FLIGHT TEST BRIEFING GUIDE**PRE-FLIGHT**

- Flight no. / test no.
- Purpose of test
- TIA signed
- Test aircraft configuration
- Ballast configuration
- Inoperative systems versus MEL and/or data requirements
- Conformity inspection (Recency of the inspection), for alterations, confirm that changes other than the ones being evaluated have been approved and any associated changes in operating limitations are understood and complied with
- Airworthiness certificate
- Changes since last flight
- Gross weights : takeoff GW / desired GW
- Center of gravity : takeoff CG / desired CG
- Fuel on board
- Aircraft performance versus takeoff conditions
- Takeoff time / crew show time / chase check-in time
- Communications : primary / secondary / emergency
- Ground station personnel / responsibilities
- Test area : location / altitude (s)
- Weather
- Fuel reserve requirements
- Recovery and landing
- Expected landing time
- Primary/alternate/emergency landing sites

TEST PROCEDURES

- Flight test plan reviewed
- Applicant's flight test report reviewed
- Detailed review of flight cards
- Buildup to end conditions
- Test predictions

- Procedures for monitoring test
- Instrumentation status
- AFM limitations

APPENDIX 1. FAA FLIGHT TEST BRIEFING GUIDE (Continued)

- Test limitations

FLIGHT TEST PERSONNEL

- Pilot/PIC/copilot
- Flight test engineer(s)
- Observer(s)
- Seat assignments/inflight changes
- Crew status/rest
- Personnel safety equipment (helmets, parachutes, etc.)

SUPPORT/CHASE AIRCRAFT

- Type
- Call sign
- Registration number.
- Crew
- Duties/procedures

CONTINGENCIES

- Lost sight/lost comms
- Emergency procedures (primary/secondary)
- Aircraft recovery devices procedures (spin chutes)
- Crew egress features/procedures
- Emergency/survival equipment procedures
- Chase/crash rescue procedures
- Alternate mission

POST-FLIGHT

- Landing time
- Discussion of test points
- Chase observations
- Data analysis observations
- FAR compliance
- Discussion of test points which approached/exceeded test limits
- Post flight inspection results
- Aircraft discrepancies
- Reports required

APPENDIX 2. IMMEDIATE RESPONSE STEPS

NOTE: The information contained in this appendix is generic in nature and is to be used for information only. It is presented in this order to facilitate building a tailored accident response plan in each organization/region.

1. Verify the accident.

- a. Complete Record of Accident - Telephone Checklist

2. Notification.

- a. Notify the local FSO, the nearest air traffic facility, and the local Flight Standards District Office (FSDO)
- b. Notify the corresponding regional AIR public affairs office.
- c. Disseminate information to appropriate office personnel.
- d. Dispatch personnel to scene (as appropriate).
- e. Submit required reports (FAA Form 4040-11 and crew member statement).
- f. Notify Next of Kin (NOK) (In the event of major accident, office manager should call the Police and/or Fire/Rescue nearest the accident to obtain directly the injuries to the crew members so this information is known during the notification process of the NOK).

3. Releasing Information.

- a. NTSB makes all releases when it is in charge of the investigation.
- b. FAA Public Affairs (regional or headquarters, as appropriate) releases information when the FAA is in charge of the investigation.
- c. News Release by the respective FAA public affairs office should only include:
 - (1) Statement that the accident occurred.
 - (2) Location and time of accident.
 - (3) Time and place aircraft departure and destination.
 - (4) Biographical information about persons involved **only after** the NOK have been notified and **only after** a reasonable period has passed so that the NOK may notify extended family members (parents, brothers, sisters, children, grandparents, etc.).

4. Telephone Watch. During the first **48 hours** a telephone watch should be maintained and a log of events and actions should be kept, especially in case of a fatality.

5. Conference Room. Secure and prepare for NTSB accident investigation board.

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)

6. Records.

- (1) Secure pilot records.
- (2) Secure project file to include TIA and conformity reports if applicable.

ACTIONS REQUIRED TO ASSIST FAMILIES IN CASE OF DEATH OR SERIOUS INJURY

1. Transportation of remains.
2. Funeral arrangements.
3. Transportation to hospital.
4. Memorial services.
5. Assistance with verification of medical, disability, retirement, and life insurance benefits.

LIST OF CHECKLISTS/FORMS (See below)

1. Record of Accident--Telephone Checklist.
2. Accident Notification Form.
3. Notification of Next of Kin--Personal Notification Form.
4. Flight Operations Checklist.
5. Safety Officer Checklist.
6. Crew Checklist.

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)**CHECKLISTS****RECORD OF ACCIDENT - TELEPHONE CHECKLIST**

RECORD THE FOLLOWING INFORMATION

1. TIME OF DAY: _____ DATE: _____

2. NAME OF CALLER: _____

3. CALLER'S ADDRESS: _____

4. CALLER'S TELEPHONE: _____

5. IS THE CALLER AN EYE WITNESS? YES NO

6. LOCATION OF ACCIDENT: _____

(CITY/TOWN): _____

7. AIRCRAFT (COLOR): _____

(SIDE NUMBER): _____ (TYPE): _____

8. LOCAL POLICE (NAME): _____

9. CAN CALLER DIRECT EMERGENCY EQUIPMENT TO THE SCENE?

(CIRCLE ONE) YES NO

10. ARE THERE OTHER EYE WITNESSES? YES NO

NAME/TELEPHONE: _____

NAME/TELEPHONE: _____

NAME/TELEPHONE: _____

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)

ACCIDENT NOTIFICATION FORM

USE THE INFORMATION BELOW AS PART OF YOUR REPORT TO YOUR ORGANIZATION. THIS INFORMATION WILL BE GIVEN TO THE MANAGER AFTER YOU CALL IN. IF YOU CANNOT REACH THE MANAGER IN A REASONABLE PERIOD OF TIME TELEPHONE THE REPORT TO THE NEAREST FSDO OFFICE.

AIRCRAFT NO.: _____ TYPE: _____

OWNER: _____ OPERATOR: _____

PURPOSE OF
FLIGHT: _____

PILOT IN COMMAND: _____ SIC: _____

OTHERS ON BOARD: _____

ACCIDENT DATE: _____ TIME: _____

DEPARTED FROM: _____

DESTINATION: _____

LOCATION OF AIRCRAFT (crash site): _____

TOTAL PEOPLE ON BOARD: _____ FATAL: _____ INJURED: _____

NATURE OF ACCIDENT: _____

WEATHER: _____

DAMAGE (if known): _____

EXPLOSIVES, RADIOACTIVE, OR DANGEROUS MATERIALS ON BOARD?

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)**PERSONAL NOTIFICATION FORM**

(To be maintained current in the respective office)

CREW MEMBERS NAME: _____

ADDRESS: _____

HOME PHONE: _____

NEXT OF KIN: _____

ADDRESS: _____

WORK ADDRESS: _____

WORK PHONE: _____

LOCATION OF DENTAL RECORDS: _____

REMARKS: _____

SECONDARY NEXT OF KIN: _____

DATE OF LAST REVIEW: _____

SPECIAL INSTRUCTIONS: _____

FLIGHT OPERATIONS CHECKLIST

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)

<u>ACTION REQUIRED</u>	<u>DATE/TIME/INITIALS</u>
1. COPY OF FORM 4040-6, AIRCRAFT REQUEST AND USE RECORD:	_____
2. PILOT'S TRAINING FOLDER:	_____
3. PILOT'S FLIGHT ACTIVITY YTD:	_____
4. COPY OF LATEST MEDICAL CERTIFICATE:	_____

SAFETY OFFICER CHECKLIST

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)

<u>ACTION REQUIRED</u>	<u>DATE/TIME/INITIALS</u>
1. ACCIDENT INVESTIGATION KIT:	_____
2. COPY OF WEATHER:	_____
3. IMMEDIATE FAA FORM 4040-11 FILED:	_____
4. TRAVEL ARRANGEMENTS TO ACCIDENT/ INCIDENT SITE:	_____
5. HOTEL ROOM SECURED:	_____
6. CONTACT NTSB:	_____
7. SECURE COPY OF SAFETY FILES AND RECORDS: FOR REVIEW BY THE NTSB:	_____

CREW CHECKLIST

1. DETERMINE THE LOCATION AND CONDITION OF ALL MEMBERS OF THE CREW AND

APPENDIX 2. IMMEDIATE RESPONSE STEPS (Continued)

PASSENGERS.

2. ASSIST IN ANY RESCUE OR FIRST AID EFFORTS IN PROGRESS.
3. LIST THE CONDITION AND LOCATION OF ALL PERSONNEL BEING REMOVED FROM THE SCENE.
4. CONTACT THE OFFICE AS SOON AS POSSIBLE AND GIVE ALL INFORMATION FROM THE ENCLOSED LISTS.